

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RAVI K. KAVURI, JOHN CHELIKOWSKY,
RENAE M. WEBER, and TIMOTHY J. KUIK

Appeal 2007-1879
Application 10/033,503
Technology Center 2100

Decided:

Before LANCE LEONARD BARRY, ANITA PELLMAN GROSS, and ST.
JOHN COURTENAY III, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

A Patent Examiner rejected claims 21-40. The Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b).

A. INVENTION

1 The invention at issue on appeal is a virtual volume management system. A user of multiple physical storage devices, e.g., magnetic disk

drives, may wish to restrict those disks from which storage space may be taken to a subset of all possible disks. To do so, he may group multiple disks into "pools." Pooling is a way to specify a set of physical disks and abstract the set as a single entity. When creating a logical disk, a user can specify a single pool of physical disks from which storage space is taken, rather than enumerating all physical disks that might be acceptable. One operation that can be performed using pooling is the creation of one or more logical or "virtual" storage devices. In such a fashion, a single virtual disk may be presented to a user, while multiple pooled physical disks are specified and employed for actual storage of his data. (Spec. 1.)

A Redundant Array of Independent/ Inexpensive Disks ("RAID") employs pooling. Besides multiple physical disk drives, a RAID device or box typically includes an internal controller, which pools the multiple disks and presents a single virtual disk to a user. Because a RAID box pools a fixed number of disks within an enclosure, its storage capacity is only as extensible as the physical enclosure allows. While a larger RAID enclosure with more disks may be possible, the number of disks that can ultimately be included always has some limit. As explained by Appellants, an arbitrarily large physical enclosure is impossible. Similarly, while an existing RAID enclosure may be stocked with disks having greater storage capacity, the Appellants are uncertain that a user's storage capacity requirements can continually be met by such "denser" RAID enclosures. (*Id.* 2.)

The Appellants' invention features a storage area network having multiple, disparate types of storage devices and multiple, virtual storage

volumes available to a user. (*Id.* 11.) Each storage device may be a physical magnetic disk drive, a RAID enclosure, a virtual disk, or any combination thereof. (*Id.* 10.) The invention further features a storage pool linked to at least one of the virtual storage volumes, and a controller for automatically allocating at least two of the storage devices to the pool. The controller also partitions and concatenates the storage devices of the pool for storage and retrieval of user data. (*Id.* 11.)

B. ILLUSTRATIVE CLAIM

Claim 26, which further illustrates the invention, follows.

26. A method for managing a plurality of virtual storage volumes available to a user for use in storage and retrieval of user data, the method comprising:

automatically allocating a storage device to a pool and linking at least one of the plurality of virtual storage volumes to the pool.

C. REJECTION

Claims 21-40 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 6,745,207 ("Reuter").

II. CLAIM GROUPING

1 "When multiple claims subject to the same ground of rejection are argued as a group by appellant, the Board may select a single claim from the group of claims that are argued together to decide the appeal with respect to the group of claims as to the ground of rejection on the basis of the selected claim alone. Notwithstanding any other provision of this paragraph, the

failure of appellant to separately argue claims which appellant has grouped together shall constitute a waiver of any argument that the Board must consider the patentability of any grouped claim separately." 37 C.F.R. § 41.37(c)(1)(vii) (2006).¹

Here, the Appellants argue claims 21-40, which are subject to the same ground of rejection, as a group. (Br. 4-6.) We select claim 26 as the sole claim on which to decide the appeal of the group.

III. ISSUE

"With this representation in mind, rather than reiterate the positions of the parties in toto, we focus on the issue therebetween." *Ex parte Nikoonahad*, No. 2006-3247, 2007 WL 1591636, at *2 (BPAI 2007). The Examiner makes the following findings.

Reuter teaches that the MA contains one or more managing clients (MC) that provide graphical user interfaces such as those in Fig[s]. 11 and 12, that facilitate management or allocation of virtual disk storage (col. 11, lines 27-28 and 59-64). Reuter also illustrates the automatic allocation of virtual disks in Fig[s]. 11 and 12 and an automatic storage pool selection for a new virtual disk (col. 12, lines 18-38).

(Answer 5.) "As such, Examiner maintains that Reuter teaches automatically allocating a storage device to a pool." (*Id.*) The Appellants argue that "the '207 patent discloses reserving existing capacity in a storage pool for a newly created virtual disk. This allocating of existing capacity in a storage pool for a newly created virtual disk of the '207 patent is not the

¹ We cite to the version of the Code of Federal Regulations in effect at the time of the Appeal Brief. The current version includes the same rules.

allocating of a storage device to a pool of the Applicants' claimed invention." (Reply Br. 1-2.) Therefore, the issue is whether the Appellants have shown error in the Examiner's finding that Reuter allocates a storage device, e.g., a virtual disk, to a pool.

IV. ANALYSIS

"Both anticipation under § 102 and obviousness under § 103 are two-step inquiries. The first step in both analyses is a proper construction of the claims The second step in the analyses requires a comparison of the properly construed claim to the prior art." *Medichem, S.A. v. Rolabo, S.L.*, 353 F.3d 928, 933 (Fed.Cir. 2003) (internal citations omitted).

A. Claim Construction

"[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). Here, claim 26 recites in pertinent part the following limitations: "allocating a storage device to a pool" Page 10 of the Appellants' Specification explains that "as seen in Figure 3, storage devices (38A, 38B, 38C, 38D) may comprise a physical magnetic disk drive (38C, 38D), a RAID enclosure (38A) as previously described, a virtual storage volume, **such as virtual disk** (38B), or any combination thereof." (Emphasis added.) Giving the representative claim the broadest, reasonable construction consistent with the Specification, the limitations require allocating a storage device, e.g., a virtual disk, to a pool.

B1. ANTICIPATION ANALYSIS

"[A]nticipation is a question of fact." *Hyatt*, 211 F.3d at 1371 (citing *Bischoff v. Wethered*, 76 U.S. (9 Wall.) 812, 814-15, 19 L. Ed. 829 (1869); *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997)). "A reference anticipates a claim if it discloses the claimed invention 'such that a skilled artisan could take its teachings in combination with his own knowledge of the particular art and be in possession of the invention.'" *In re Graves*, 69 F.3d 1147, 1152 (Fed. Cir. 1995) (quoting *In re LeGrice*, 301 F.2d 929, 936 (CCPA 1962)). Of course, anticipation "is not an 'ipsissimis verbis' test." *In re Bond*, 910 F.2d 831, 832 (Fed. Cir. 1990) (citing *Akzo N.V. v. United States Int'l Trade Comm'n*, 808 F.2d 1471, 1479 & n.11 (Fed. Cir. 1986)). "An anticipatory reference . . . need not duplicate word for word what is in the claims." *Standard Havens Prods., Inc. v. Gencor Indus., Inc.* 953 F.2d 1360, 1369 (Fed. Cir. 1991).

Here, Reuter's "invention provide[s] a system and method for the management of virtual storage." (Col. 1, ll. 54-55.) Generally, "FIGS. 8 to 15 [of the reference] show illustrative graphical user interfaces that can be provided (e.g., via management consoles MC or the like) to facilitate management of the virtual storage in relation to the creation of a virtual disk" (Col. 11, ll. 59-62.) "In the . . . example shown in FIG. 8, virtual disks can be created with a wizard that leads the customer through a series of steps." (Col. 12, ll. 3-5.)

As aforementioned, the Appellants recognize that Reuter "allocat[es] . . . existing capacity in a storage pool for a newly created virtual disk" (Reply Br. 1-2.) By allocating capacity in the storage pool to the virtual

disk, of course, the reference can be said to also allocate the virtual disk to the capacity in the storage pool. For their part, the Figures cited by the Examiner confirm that Reuter's system allocates a newly created virtual disk to a storage pool. To wit, "FIG. 11 shows a[] user screen shot that can be provided with the wizard, requesting that the user provide the capacity for the new virtual disk." (Col. 12, ll. 18-20.) "[T]he system can determine whether there is any storage pool in which a fully allocated virtual disk of the requested size can be created." (*Id.* ll. 23-26.) Furthermore, "FIG. 12 shows another user screen shot that can be provided with the wizard, requesting that the user specify the location for the new virtual disk. Preferably, a default would be an automatic storage pool or storage pool selection." (*Id.* ll. 30-33.)

V. CONCLUSION

Because Reuter's system allocates a newly created virtual disk to a storage pool, the Appellants have shown no error in the Examiner's finding that Reuter allocates a storage device, e.g., a virtual disk, to a pool. Therefore, we affirm the rejection of claim 26 and of claims 21-25 and 27-40, which fall therewith.

"Any arguments or authorities not included in the brief or a reply brief filed pursuant to [37 C.F.R.] § 41.41 will be refused consideration by the Board, unless good cause is shown." 37 C.F.R. § 41.37(c)(1)(vii). Accordingly, our affirmance is based only on the arguments made in the briefs. Any arguments or authorities omitted therefrom are neither before us nor at issue but are considered waived. *Cf. In re Watts*, 354 F.3d 1362, 1367

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(Fed. Cir. 2004) ("[I]t is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board.")

No time for taking any action connected with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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